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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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06/01/2001

Richard S. Norman

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06/16/2006

Ralph A. Dowell of DOWELL & DOWELL P.C.

2111 Eisenhower Ave

Suite 406

Alexandria, VA 22314

EXAMINER

LEE, ANDREW CHUNG CHEUNG

ART UNIT

PAPER NUMBER

2616

DATE MAILED: 06/16/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/870,841

Applicant(s)

NORMAN ET AL.

Examiner

Andrew C. Lee

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 4 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 08 March 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4, 13 and 17 is/are rejected.
- 7) ☒ Claim(s) 5-12, 14-16 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1 – 4, 13, 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chang et al. (US 6731631 B1) in view of Oguchi (US 6907042 B1).

Regarding Claims 1, 13, Chang et al. disclose the limitation of a router (recited “a switch may also include the function of a router” as a router; column 2, lines 14 – 16), comprising: a routing layer (recited “Network Layer of OSI- Layer 3” as routing layer; column 2, lines 20 – 22; lines 37 – 43), said routing layer including a plurality of I/O ports for exchanging data with components external to said router (recited “multi-port switch architecture comprises a plurality of port controllers” as routing layer including a plurality of I/O ports; Fig. 1, elements 102; column 5, lines 62 – 67, column 6, lines 1 – 11); a switching layer to switch data packets between I/O ports of said routing layer (Fig. 3, elements 302a, 302b (layer 2/3/4 Switching Controller); column 7, lines 53 – 58), said switching layer including an array of cells in communication with said routing layer for permitting exchange of data packets between said array of cells and said routing layer (Fig. 22, elements 2202a, 2202b, 2002c, 2202d as an array of cells; column 17, lines 23 – 41; Fig. 28, element 2812; column 18, lines 1 – 7; lines 19 – 30);

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each cell including a memory for receiving a data packet from said routing layer (recited “incoming packets is stored in memory of the switch matrix” as cell including a memory for receiving a data packet; Fig. 20, column 16, lines 2 – 6); Chang et al. do not disclose explicitly the routing layer including a controller to control release of a data packet toward a cell of said array at least in part on a basis of a degree of occupancy of the memory in said cell. Oguchi discloses the limitation of the routing layer (recited “Layer 3 “ as routing layer) including a controller (recited “reassembly buffer processor” as a controller) to control release of a data packet toward a cell of said array at least in part on a basis of a degree of occupancy of the memory in said cell (recited “the free space notifying portion allocated in the upper layer can detect the free space of the of the receiving buffer “ as release of a data packet toward a cell of said array at least in part on a basis of a degree of occupancy of the memory in said cell; column 6, lines 39 – 47, lines 53 – 59). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Chang et al. to include the routing layer including a controller to control release of a data packet toward a cell of said array at least in part on a basis of a degree of occupancy of the memory in said cell such as that taught by Oguchi in order to provide a packet processing device which realizes a layered communication protocol processing wherein a packet processing is sped up without influences between processes in each layer (as suggested by Oguchi, see column 5, lines 64 – 67).

Regarding Claim 2, Chang et al. disclose the limitation of a router (recited “a switch may also include the function of a router” as a router; column 2, lines 14 – 16) as defined in claim 1, wherein said routing layer comprising a memory for storing data packets for release to said

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switching layer (Fig. 3, elements “lookup memory and packet memory”), said controller controlling release of data packets from the memory of said routing layer (Fig. 3, element “Octal Fast Port Controller”; column 7, lines 25 – 35).

Regarding Claim 3, Chang et al. disclose the limitation of a router (column 2, lines 14 – 16) as defined in claim 2, wherein the memory of said routing layer includes an area for storing data indicative of a degree of occupancy of the memory of said cell (Fig. 20, column 16, lines 2 – 6; column 16, lines 33 – 41).

Regarding Claim 4, Chang et al. disclose the limitation of a router (recited “a switch may also include the function of a router” as a router; column 2, lines 14 – 16 as defined in claim 3, Chang et al. do not disclose explicitly wherein said controller is in communication with said memory to obtain access to the data indicative of a degree of occupancy of the memory of said cell, said controller controlling release of data packets from the memory of said routing layer at least in part on a basis of the data indicative of a degree of occupancy of the memory of said cell. Oguchi discloses the limitation of wherein said controller (recited “reassembly buffer processor” as a controller) is in communication with said memory to obtain access to the data indicative of a degree of occupancy of the memory of said cell (recited “detecting the free space based on the information within a backward packet” as to obtain access to the data indicative of a degree of occupancy of the memory of said cell; column 6, lines 39 – 47), said controller controlling release of data packets from the memory of said routing layer at least in part on a basis of the data indicative of a degree of occupancy of the memory of said cell (recited “the free space

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notifying portion allocated in the upper layer can detect the free space of the of the receiving buffer “ as release of a data packet toward a cell of said array at least in part on a basis of a degree of occupancy of the memory in said cell; column 6, lines 39 – 47, lines 53 – 59). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Chang et al. to include wherein said controller is in communication with said memory to obtain access to the data indicative of a degree of occupancy of the memory of said cell, said controller controlling release of data packets from the memory of said routing layer at least in part on a basis of the data indicative of a degree of occupancy of the memory of said cell such as that taught by Oguchi in order to provide a packet processing device which realizes a layered communication protocol processing wherein a packet processing is sped up without influences between processes in each layer (as suggested by Oguchi, see column 5, lines 64 – 67).

Regarding Claim 17, Chang et al. disclose the limitation of a router (recited “a switch may also include the function of a router” as a router; column 2, lines 14 – 16), comprising: a routing layer (recited “Network Layer of OSI- Layer 3” as routing layer; column 2, lines 20 – 22; lines 37 – 43), said routing layer including a plurality of I/O ports for exchanging data with components external to said router (recited “multi-port switch architecture comprises a plurality of port controllers “ as routing layer including a plurality of I/O ports; Fig. 1, elements 102; column 5, lines 62 – 67, column 6, lines 1 – 11); a switching layer to switch data packets between I/O ports of said routing layer (Fig. 3, elements 302a, 302b (layer 2/3/4 Switching Controller); column 7, lines 53 – 58),

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Chang et al. do not disclose explicitly said routing layer including a controller, said controller responsive to reception of a control signal containing information indicating that said switching layer is capable of accepting a data packet, to release a data packet to said layer; wherein said switching layer includes a memory, the control signal containing information indicating the degree of occupancy of said memory. Oguchi discloses the limitation of said routing layer including a controller (recited “reassembly buffer processor” as a controller), said controller responsive to reception of a control signal containing information indicating that said switching layer is capable of accepting a data packet, to release a data packet to said layer (recited “the free space notifying portion allocated in the upper layer can detect the free space of the of the receiving buffer “ as release of a data packet toward a cell of said array at least in part on a basis of a degree of occupancy of the memory in said cell; column 6, lines 39 – 47, lines 53 – 59); wherein said switching layer includes a memory (recited “receiving queue” as memory, Fig. 6, element 40), the control signal containing information indicating the degree of occupancy of said memory (recited “extract a window size indicating the free space of the receiving socket buffer” as control signal containing information indicating the degree of occupancy of said memory; column 12, lines 48 – 58). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Chang et al. to include said routing layer including a controller, said controller responsive to reception of a control signal containing information indicating that said switching layer is capable of accepting a data packet, to release a data packet to said layer; wherein said switching layer includes a memory, the control signal containing information indicating the degree of occupancy of said memory such as that taught by Oguchi in order to provide a packet processing device which realizes a layered communication protocol

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processing wherein a packet processing is sped up without influences between processes in each layer (as suggested by Oguchi, see column 5, lines 64 – 67).

***Allowable Subject Matter***

3. Claims 5 – 12, 14 – 16 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Response to Arguments***

4. Applicant's arguments filed on 3/8/2006 with respect to claims 1 – 17 have been fully considered but they are not persuasive.

***Conclusion***

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andrew C. Lee whose telephone number is (571) 272-3131. The examiner can normally be reached on Monday through Friday from 8:30am - 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ricky Ngo can be reached on (571) 272-3139. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.



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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

ACL

June 10, 2006

  
RICKY Q. NGO  
SUPERVISORY PATENT EXAMINER